BERMUDA

REPORTS

OF THE

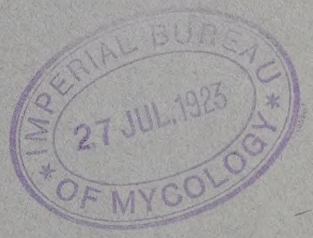
BOARD AND DEPARTMENT

OF

AGRICULTURE

FOR THE YEAR

1920



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BOARD OF AGRICULTURE,

Hamilton, Bermuda,

12th July, 1921.

Sir:—

I am directed by the Board of Agriculture to forward herewith, for the information of His Excellency the Governor, and transmission to the Legislature, the Reports of the Board of Agriculture and the Department of Agriculture for the year 1920.

I have the honour to be,

Sir,

Your obedient servant,

E. GRAHAM PERINCHIEF,

Clerk, Board of Agriculture.

The Honourable

The Acting Colonial Secretary.

Report
Of the Board of Agriculture
For Year 1920

Meetings.

The Board met on eighteen occasions during the year. There are twelve members, and the average attendance was nine members.

Agricultural Station.

The report of the Director of Agriculture deals fully with the work done at the Station.

Inspection of Produce and Green Vegetables.

The work of inspection has been carried out by the Inspectors in a most satisfactory manner.

The cost and other details of inspection will be found in the attached reports of the Inspectors.

Improvement of Onion Seed.

The former importance of the onion crop and its recent shrinkage, due largely to the inferiority of the seed imported, caused the Board to again raise the question of sending the former Director of Agriculture, Mr. E. J. Wortley, M.B.E., F.C.S., to the Canary Islands to investigate the conditions under which the seed is grown and shipped. His valuable report of the work done is quoted extensively in the report of Mr. E. A. McCallan, the present Director.

Mr. Wortley was accompanied by a representative of the Bermuda Green Vegetable Growers' Association, Mr. W. R. Lightbourn, who is probably more interested in the improvement of onion seed than any other person in the Colony.

Visit of Professor Whetzel.

Professor H. H. Whetzel, Plant Pathologist of the New York State College of Agriculture, Cornell University, visited Bermuda during the year with the object of studying the diseases of the lily, and pink root and other diseases of the onion, and went as thoroughly into the subject as time permitted. It is hoped that future investigations will result in practical methods of control.

Promotion of Mr. E. J. Wortley.

On the 30th September, 1920, the Colony suffered the loss of the services of Mr. E. J. Wortley, who had been promoted to the appointment of Director of Agriculture, Nyasaland.

Mr. Wortley assumed the duties of Director of Agriculture of Bermuda on the 1st January, 1913, since which date he had consistently

worked in the interests of the agricultural community of these Islands. He constantly devoted himself to the improvement of seed of all kinds imported for the farmers and was indefatigable in his efforts to improve potato seed by visits to the seed-growing centres in America, and by interesting the Departments of Agriculture in Canada and the United States. Another important and valuable work was the institution of Agricultural Unions in the various Parishes at which he lectured himself and also obtained similar services from the leading experts.

Among the many other valuable services rendered the Colony were the question of food imports and the investigation of our marketing conditions carried out during his visits to the United States of America.

Mr. Wortley carried with him to his new sphere of usefulness the high appreciation of the Board and its good wishes for his future.

Resignation of Mr. L. M. Outerbridge.

On the 15th September Mr. L. M. Outerbridge, who had worked with the Department for five years as Clerk, and latterly as Acting First Agricultural Assistant, left the Islands, on resignation, for the purpose of entering the Canadian Methodist Church.

By his resignation the Department lost the services of a valuable and useful man, who had entered from the very start most thoroughly into the work in all its phases.

Financial.

Statements of the disbursements of the various grants at the disposal of the Board and the receipts from the Agricultural Station will be found in the appendixes.

W. R. WINTER,

Chairman, Board of Agriculture.

11th July, 1921.

REPORT OF THE DIRECTOR OF AGRICULTURE FOR THE YEAR 1920.

TO THE CHAIRMAN,
BOARD OF AGRICULTURE.

To report on the work of the Department for a year during which I was attached to the Department of Public Works as Acting Colonial Surveyor is not an easy task, and I trust that the Board will bear in mind the circumstances under which the report which follows has been prepared, and excuse its imperfections, as well as the lateness of its presentation.

Agricultural Station.

The work at the Station has included experiments in potato and vegetable growing; many thousands of vegetable seedlings, as well as other seedlings and cuttings, have been grown for free distribution; and the care of the ornamental beds, lawns and paths has absorbed considerable time.

The potato experiments, which cover an area of 139½ rods only, have been a continuation of those arranged in 1913 and later, and have embraced tests of varying quantities of fertilizer, different-sized cuts, distances apart, depths of planting, and the like. The potato plots have been cropped to potatoes since 1913. During the last five years it has been very difficult to purchase adequate quantities of stable manure, and the applications to the plots have been very light, and at times lacking altogether. A crop of legumes, either cowpeas or soy beans, has been plowed under each year, and the yields of potatoes which have been obtained have testified to the high value of leguminous green manure. No failure of either cowpeas or soy beans has occurred.

The chief objects of the vegetable tests conducted at the Station are the elimination of varieties and strains which are unsuitable for cultivation in Bermuda, and the introduction of improved strains and varieties. The vegetable plots measure 176 rods, and are mainly on made land; the soil, therefore, demands heavy dressings of manure, which it has not received for several years; nor will an adequate supply of barnyard manure be available until live stock can be kept at the Station.

During the years of the war attention was confined to stimulating the cultivation of food crops and other matters of prime importance, and the ornamental side of gardening was neglected. As a result the flower beds, shrubs and lawns at the Station were not very well cared for, and are not now as attractive as they would be had the past years been normal ones.

The Board will recollect that in 1914 there was under consideration the purchase of a farm better adapted to the requirements of an agricultural experiment station than is the present garden. The outbreak of war put an end to the matter for several years, and it is now recommended that the Station should be enlarged by the purchase of suitable land in its immediate vicinity, rather than that a new site should be secured elsewhere.

It is not necessary to dwell on the urgent need to enlarge the present Station, which contains slightly over seven acres, of which less than two acres are available for cropping, and on which no live stock can be kept, or adequate experiments conducted with fruits, potatoes and vegetables.

Seed Potato Improvement.

The most important of the results secured by the former Director, Mr. E. J. Wortley, was the improvement of seed potatoes, especially the Chili Garnet seed obtained from Nova Scotia, which now shows satisfactory freedom from leaf-roll, as a rule. The improvement of the Red Bliss Triumph seed grown in Long Island, New York, has presented greater difficulties, and satisfactory freedom from mosaic cannot yet be reported. Few tasks of greater consequence face the Department than that of continuing the improvement of potato seed begun by Mr. Wortley, for our potato crop has risen to premier place, and is likely to remain there.

The field inspection of Triumph and Garnet seed was carried out in 1920 by Mr. B. C. C. Outerbridge and Mr. Jas. H. Hollis, members of the Board, the Director being in the Canary Islands at the time. Mr. H. C. Sands, Pathologist of the New York State Department of Agriculture, and Mr. W. K. McCulloch of the Federal Department of Agriculture, Canada, co-operated with Mr. Outerbridge and Mr. Hollis in the inspection in Long Island and Nova Scotia respectively, and the Colony is deeply indebted to them. Reports presented by Mr. Outerbridge and Mr. Hollis will be found elsewhere.

No less than four strains of Triumph seed were planted in Bermuda last season, and it is to be regretted that it was not possible to have had the seed under close observation during its growth; for a year's experience has been lost. The four strains referred to were obtained from the following sources: (a) Long Island, New York; (b) Three Lakes, Wisconsin; (c) New Brunswick, and (d) Hornell, New York. Arrangements are being made by those responsible to again import seed from the three last-named sources, as well as from the main source of supply in Long Island. The Board has already signified its wish that the Director should field inspect the strains previous to shipment to Bermuda, and as the crop will be under observation when grown in Bermuda, some definite information will be secured with respect to the comparative value of the four strains.

The question of spraying the Nova Scotia Garnet potatoes intended for seed in Bermuda has been agitated for some time, and it should be insisted on in view of the losses sustained by the Bermuda farmers because of failure on the part of the Nova Scotia farmers to control late blight. The price of seed potatoes demands attention on the part of the importers. Since 1914 the selling price of Triumph and Garnet seed has increased 194 and 169 per cent. respectively.

Improvement of Onion Seed.

Formerly the most important, our exports of onions have recently declined to comparatively small proportions. The shrinkage in the quantity exported is due to no small measure to loss of maturity. "Many farmers report, and official records show, that as recently as eleven years ago comparatively large proportions of onions were shipped from the Colony in March and during the first part of April; in recent years the crops have been later."

To secure, if possible, a strain of early-maturing white onion seed, free from red and pink-skinned mixtures, the then Director, Mr. E. J. Wortley, accompanied by Mr. W. R. Lightbourn, who was sent by the Green Vegetable Growers' Association, visited the Canary Islands in 1920.

The following abstracts are from the Director's report on the visit:

To place the onion industry of the Colony on a sounder financial basis, it is necessary that steps should be taken:

(1) To eliminate the strains of white onions that, instead of being true to type, are mixed with pinkish and reddish onions.

(2) To obtain earlier maturing strains.

(3) To control the pink root disease.

It was recognition of the desirability of raising the standard of the onion seed imported into these Islands that led to my being sent, accompanied by Mr. W. R. Lightbourn, to the Canary Islands to investigate the conditions under which the onion seed intended for shipment to Bermuda is grown and marketed.

It may be well to give some idea of the losses sustained by the onion growers of Bermuda.

Some of the strains of white onion seed imported into the Colony for some time past have shown a large admixture of reddish and pinkish onions. Stock of this class secures a lower price on the New York market, which is noted for its exacting demands as to uniformity of grading. For example, in May of this year well-graded onions of the white variety, all true to type, were selling for $2.75 per crate; stock that was a mixture of white and pinkish onions was selling for from $1.75 to $2.25.

Our investigations in Teneriffe indicated that it would be comparatively easy to obtain strains of a type desirable in colour and shape.

Many farmers report and official records show that as recently as eleven years ago a comparatively large proportion of onions were shipped from the Colony in March and during the first part of April; in recent years the crops have been later.

The seasons unquestionably have a great deal to do with the time of maturity, but the experience of onion breeders in England and the United States proves that it is possible by patient and intelligent selection over a number of years to produce early strains.

No effort whatever has been made along this line in the Canaries up to the present; in fact, growers there are better pleased with a late onion, and the natural result of the methods adopted by the trade would be to produce a later maturing onion.

The value to Bermuda of early maturing strains cannot well be overestimated and may mean the difference between profit and loss.

The losses from pink root last year, when the disease was very much worse than it has been during the past seven years, can be conservatively estimated at 25 per cent. of the total value of the crop. As far as is known at present this disease is due to an organism already distributed in the Bermuda soils and there is no cure for the disease, but it may be partially controlled by the application of nitrogenous manures and fertilizers. Reasoning from the success recorded in combating closely related diseases of cabbages, cotton, melons and bananas, the best chance of complete control of pink root lies in the breeding of immune strains of onions. Apart from the possibility of exceptional luck, the task will be a difficult one, but the matter is of such importance to the farmers of the Colony as to warrant its having a first claim on the energies of the Department.

After dealing with the conditions found in the Canary Islands ,Mr. Wortley submitted the following suggestions for improving the quality of seed imported into Bermuda:

(a) The Board of Agriculture in consultation with the seed importers should decide whether to select La Palma or Teneriffe as the main source of our seed supply. Either island would, in my opinion, eventually prove satisfactory, and the selection should depend upon the degree of supervision the Bermuda Government decides to exercise in the future, as well as upon the extent of co-operation given by the merchants in Bermuda.

(b) If Teneriffe is selected:

(1) A decision should be made as to whether to deal with one or two of the reliable seed importers whom we met.

(2) An exact description of the type of the onion we require should be put in writing and forwarded to the seedsman or seedsmen selected.

(3) Visits should be paid to Teneriffe from time to time by a representative of the Colony to check the work.

(c) If La Palma is selected as the source, arrangements should be made for sending a representative to that island for a lengthy period of time each year to select the stock for planting and to purchase all the seed required by the Colony. The representative should in this case be largely responsible to the seed importers.

(d) Early maturing plants in Bermuda should be selected in March and April, and the bulbs shipped to the Canaries.

(e) Close touch should be kept with Prof. J. A. Crow of the Ontario Agricultural College, Guelph, who has offered to develop a new strain of Bermuda onion, and to whom seed has already been sent for the purpose.

(f) Experiments should be conducted with a view to discovering a new strain or variety immune to pink root. This may prove a difficult task, and close watch should be kept on the work of American scientists who are likely to work on these lines for the control of the pink root disease.

Following the average yearly exportations of onions during the ten-year periods named:

Ten Years Ending—	Average Yearly Exports.
1890	232,008 crates.
1900	315,715 "
1910	279,991 "
1920	128,670 "

Green Vegetables.

Under the provisions of "The Vegetable Seeds Act, 1919," three hundred and twenty-eight viability tests of vegetable seeds imported and offered for sale were made at the Station during the year. The bulk of the seed tested was of satisfactory vitality and fairly true to type.

The cultivation of but one standard variety of each kind of vegetable grown for shipment is highly desirable, and an increase in the kinds of vegetables exported is strongly recommended. Too much stress cannot be laid on the importance of placing vegetables on the New York market in the very best possible condition.

During the season of 1919-1920 Mr. G. E. Winter, Inspector of Green Vegetables, made five trips to New York for the purpose of observing the condition of the vegetables in transit and landing, and other matters relating to the marketing of Bermuda produce in New York. The Inspector is intensely interested in his work, and discharged the duties connected with these trips very efficiently.

It is recommended that a representative of the Department should be permanently stationed in New York during the market season.

Many people complain of the absence of fresh vegetables in the local market. Recently an importation of Southern-grown lettuce and cauliflower was seen at the dock beside Bermuda-grown lettuce and other vegetables on the way to New York to be sold at a loss. Would it not be profitable to develop a local market?

Improvement of Lilies.

Like the export trade in onions, the trade in Easter lilies has shrunk to very small proportions; this has been due in part to carelessness on the part of the growers. The experience of a few proves that by the exercise of intelligent care excellent disease-free bulbs can be produced, and the stock of such bulbs increased from year to year. Prof. H. H. Whetzel, Pathologist of New York State College of Agriculture, was in Bermuda in April last, and studied the diseases of the lily and the onion. If further study can be given to the diseases of the lily, and growers instructed in their control it appears probable that the lily bulb industry can be increased to its former dimensions.

In 1919 several thousand bulbs of Lilium longiflorum giganteum were imported into Bermuda by Messrs. Henry & Lee of New York. The result of the experiment has not been altogether satisfactory, but maybe it is too early to speak definitely; however, growers are recommended to give attention to the improvement of Harrisii, rather than to the introduction of giganteum or other varieties.

Fruit Growing.

The loss of Bermuda fruit is due to the ravages of the Mediterranean fruit fly (Ceratitis capitata), the purple scale (Lapidosaphes beckii), and other diseases and pests, to the crowding of fruit trees out of the best soils and locations, and to lack of interest in fruit culture. Fruit diseases and pests can be controlled, and the tropical and sub-tropical fruits which grow moderately well here are fairly numerous, and many householders could and should grow fruit for their own tables. Commercial fruit-growing in Bermuda will probably never pay.

Associated with the control of fruit diseases and pests is the control of the West Indian peach scale (Aulacaspis pentagona), which threatens to do very serious injury to the oleander. The control measures against plant diseases and pests should include, it is recommended, the enactment of an Act giving the Board authority to make such regulations which may be considered necessary.

Improvement of Live Stock.

In recent years the Board has taken no very active steps to improve live stock. In 1918 the Ayrshire bull "Hillside Spicey's Laddie" 61782, and the Saanen buck "Prince John" 2210, were imported. The latter died during the year under report.

"Hillside Spicey's Laddie" has been at service at the farm of Dr. J. W. Cann, M.C.P., Somerset Bridge, since January, 1919. During the year 1920 the services were eighteen in number, and the cost to the Department for feed was £45-8-4. "Prince John" when mature was placed in the care of Dr. F. W. E. Peniston, V.S., Penhurst, Smiths, and afterwards with the late Dudley Hollis, Deepdale Farm, Pembroke, and had been brought to the Station during the summer of 1920 previous to being sent to Southampton. The death of this fine buck is a great loss.

In 1920 Mr. R. B. Angus of Montreal presented to the Board an Ayrshire bull calf "Pinebluff Laddie" 74145. The Board is under obligation to Mr. Angus for his valuable gift, and to Mr. James Morgan of Southlands, Warwick, for bringing the animal to Bermuda and caring for it.

On another page will be found the report of the live stock committee which was presented to the Board in February, 1920. The recommendations contained in the report should be put into effect without undue delay.

Boys' and Girls' Agricultural Clubs.

In April last seed corn and summer vegetable seeds were issued to the members of the Boys' and Girls' Agricultural Clubs. The corn was judged after the schools re-assembled for the Christmas term. The winners of the silver cups were as follows:

Cup presented by the Bermuda Green Vegetable Growers' Association—
RUDOLPH COWEN, Cedar Hill School, Southampton—
For best ten ears of corn grown by a boy.

Cup presented by Honourable W. E. Jackson, C.M.G.—
IRENE GIBBONS, Whitney Institute, Smiths—
For best ten ears grown by a girl.

Cup presented by J. P. Hand, Esq., M.B.E.—
RUDOLPH COWEN, Cedar Hill School, Southampton—
For largest yield of corn (96 lbs. in the ear from 1 gill of seed).

The general cash prizes for ten-ear corn exhibits (open to all schools) were awarded as follows:

1—RUDOLPH COWEN, Cedar Hill School, Southampton (Association Cup also).
2—LEONARD GIBBONS, Whitney Institute, Smiths.
3—WYNDHAM COWEN, Cedar Hill School, Southampton.
4—MILLARD CANN, Sandys Grammar School, Sandys.
5—IRENE GIBBONS, Whitney Institute, Smiths (Mr. Jackson's Cup also).
6—ELLEN VIRGIL, Woodlands School, Sandys.

The following members won cash prizes for yields from one gill of seed planted:

1—RUDOLPH COWEN, Cedar Hill School, Southampton (Mr. Hand's Cup also).
2—NINA TECEIRA, Woodlands School, Sandys.
3—BELLE TECEIRA, Woodlands School, Sandys.
4—DOROTHY SMITH, Cedar Hill School, Southampton.
5—DAVID HUGHES, Cedar Hill School, Southampton.
6—ELSIE COWEN, Cedar Hill School, Southampton.

In the competitions within the schools many small cash prizes were awarded for ten-ear corn exhibits and other summer crops. In all sixty-five cash prizes were awarded to fifty-one members of sixteen clubs. The prizes amounted to a total of £9-0-6.

The record of Cedar Hill School is extremely good. It is a small school, the enrollment being silghtly above forty, and was opened in 1918. In 1919 Rudolph Cowen won the Bermuda Green Vegetable Growers' Association cup and his sister, Elsie, the cup presented by Mr. Jackson; and in 1920 Rudolph Cowen again won the B. G. V. G. A. cup and also the cup presented by Mr. Hand. Irene Gibbons has twice held the cup presented by Mr. Jackson, first winning it in 1918.

The experience of the past has proved that more attention on the part of this Department, the school teachers and the Department of Education is needed if the agricultural instruction in the schools, in class rooms, school gardens and clubs, is to be made of permanent value.

Inspection of Produce and Green Vegetables.

The inspection of agricultural exports has been very ably performed during the year by Mr. R. W. Browne and Mr. G. E. Winter, Inspector of Produce and Inspector of Green Vegetables respectively, and by their assistants.

Amendments of the inspection acts in certain particulars and their consoldidation is recommended.

Value of Export Trade.

Until 1920 no attempt was made to place a correct valuation on the agricultural produce exported from the Colony. The values placed on the goods for Customs declarations were accepted, though these values were known to be more or less incorrect. During the year under report the shipments to New York by each boat were obtained, and the values were fixed after a study of (a) market quotations, (b) the salesbook of the Bermuda Green Vegetable Growers' Association, and (c) the sales of individual farmers.

Below is given a summary of the values:

Potatoes, 58,605 barrels	$906,619.35	
Green Vegetables, 271,284 bus. crates	630,227.85	
Onions, 81,373 bushel crates	225,507.04	
		$1,762,354.24
Shed Tax in Bermuda	4,608.97	
Freight to New York	238,920.93	
Cartage in New York	49,917.00	
Duty	68,465.87	
10 per cent. Commission	176,235.42	
		538,148.19
Net Value		$1,224,206.05

To the net value given above should be added the shed tax which was paid in Bermuda, the local receivers' share of the commission, and the refund of duty on containers of American origin. The above statement deals only with potatoes, green vegetables and onions shipped to New York. In addition there is to be considered the small quantities of the above-named produce shipped to Canada and the West Indies, also lily bulbs and other agricultural and horticultural products of minor value.

Improvement of Marketing Conditions.

The functions of an agricultural department are no longer confined to instruction in how to grow two blades of grass where one grew before, for if the one blade was sold at a loss it is reasonable to assume that greater loss will be incurred in selling two—if no improvement is effected in marketing conditions. Increasing attention is therefore being given to marketing and associated problems by the agricultural institutions throughout the world.

If the Board is alive to its responsibilities it will give increased thought to the peculiar marketing difficulties which face the Bermuda farmer, and take active steps to ameliorate these difficulties.

In December, 1917, the former Director, Mr. E. J. Wortley, presented to the Chairman of the Agricultural Commission a very comprehensive report of his investigations of the conditions under which Bermuda produce is marketed in New York, and in his report for 1916-1918 are found the measures recommended by him to be adopted in the interests of the agricultural community. Study of the reports will prove of interest.

Some of the recommendations then submitted have since been put into effect, but action has been delayed or restricted with respect to others, and early attention should be given to the latter. The additional recommendations are submitted:

(1) Improvement in standards of grading, packing and containers.

(2) Licensing of Bermuda shippers of produce.

(3) Trial shipments of vegetables grown at the Station to markets other than New York.

(4) Trial shipments to New York of vegetable novelties grown at the Station, and other steps to increase the kinds of vegetables exported.

(5) The canvass of American markets within easy distance of New York, and of markets in Canada, Newfoundland, and the West Indies, with the object of increasing the demand for our vegetables in these markets.

(6) A study of the English market in anticipation of improved communication, and the opportunity of shipping vegetables and nursery stock direct to that market.

(7) A study of the Canadian market with the object of creating a demand for Bermuda nursery stock.

(8) Representation to the United States Government with the object of securing free entry of our vegetables into that country, and an increase in the kinds of nursery stock exempted under the plant quarantine laws now in force.

Labour.

On several occasions the shortage of labour was discussed by the Board, and a joint committee representing the Board of Agriculture and the Chamber of Commerce was appointed. The discussion of the question by the Board and by the committee, however, bore no fruit, and no practical steps were taken during the year under report to relieve the situation.

Death of Mr. Lennock Godet.

During the year occurred the death of Mr. F. Lennock Godet, who was for many years associated with the agricultural development of the Colony as Secretary of the Bermuda Agricultural Association, which by means of its annual exhibitions did much to stimulate agriculture and other local industries.

Changes in Staff.

Mr. E. J. Wortley, F.C.S., M.B.E., resigned his position as Director of Agriculture on the 30th September, 1920, to assume a similar position in Nyasaland, East Africa.

Mr. E. A. McCallan, First Agricultural Assistant, was appointed Director, with effect from the 1st October, but was not permitted to relinquish his duties as Acting Colonial Surveyor (to which office he was appointed on the 1st November, 1919), until the 1st February, 1921.

Col. W. R. Winter, O.B.E., Chairman of the Board, was appointed Acting Director of Agriculture during the interval between Mr. Wortley's departure and Mr. McCallan's full assumption of duty.

Mr. L. M. Outerbridge was appointed Second Agricultural Assistant and Acting First Agricultural Assistant on the 10th November, 1919. During the Director's absence from the Colony he was in charge of the Department. Mr. Outerbridge resigned on the 15th September, after service with the Department extending over five years.

The many changes in the Department during the year threw much additional work and responsibility on Mr. C. V. S. Earley, Foreman of the Station, and Mr. G. L. Young, Clerk, and I take this opportunity of acknowledging the efficient way in which they discharged their duties under the unusual conditions which obtained.

Financial.

The expenditure of £3,225-7-6 was authorized by the Appropriation Act of 1920. Of this amount the sum of £3,128-6-6 was expended.

For sales of potatoes, vegetables, &c., the sum of £209-4-6 was received and reimbursed to the Treasury.

Statements of the expenditure under the various sub-heads and sales will be found in Appendixes "A" and "B."

During the past eight years the expenditure by the Department (exclusive of salaries), and the receipts at the Station have been as follows:

Year.	Expenditure.	Receipts.
1913	£2,274 5 2	£32 18 1
1914	3,042 2 3	32 14 0
1915	2,529 18 0	89 3 4
1916	2,497 19 2	163 18 10
1917	2,045 5 7	156 2 10
1918	2,051 8 0	376 3 4
1919	2,722 5 8	157 18 0
1920	3,128 6 6	209 4 6

E. A. McCALLAN,
Director of Agriculture.

Agricultural Station, Bermuda,
31st March, 1921.

REPORT OF THE GOVERNMENT VETERINARY OFFICER FOR THE YEAR 1920.

THE DIRECTOR OF AGRICULTURE:

I have the honour to make the following report of live stock conditions in the Colony.

During the year upwards of 276 horses have been imported from Canada and the United States, a large number considering the size of the Colony. Those coming from the United States have been a very fair lot of stock, while those coming from Canada have been well on in years and in thin condition. During the first part of the year 1920, from January to March, considerable contagious influenza existed in the Colony, so that it was necessary to close all public drinking fountains, and to caution owners to keep horses at home if excessive discharge was noticeable at the nostrils. There have been two suspicious cases of glanders brought to my notice, both of which on a medical test proved to be chronic nasal gleet, complete recovery took place in both cases. There is today a full compliment of horses in the country. Several have been exported.

Referring to dairy stock, several pure-bred Guernseys and a few Holsteins have been imported, greatly to the satisfaction of those interested along this line. The sum of £850 has been set aside for stock to be purchased by the Colony; this will, I think, be a great asset in the near future. Two cows have been tested for tuberculosis, one of which proved to be tubercular, although no post mortem was held to verify the hypodermic test. The regular allotment was paid for the one killed, while the other proved to be non-tubercular. One case of actinomycosis or lumpy jaw occurred, and was placed under treatment; on this I was in consultation. The result of the treatment and happenings to the case have not been reported to me, but I surmise that the animal ultimately recovered or succumbed to the disease, and is not now at large.

The swine industry was up to the last of the year 1920 in a very prosperous condition, but while this report only covers the year 1920, I will state for the information of the Board that during January and February, 1921, quite a number of sick pigs were reported in the middle and western parishes and quite a few succumbed to the disease. I made several post mortems which revealed only gastritis or inflammation of the stomach, and this in a very limited area of the organs. The animals showed very little fever, except when complications occurred, such as bronchitis or pneumonia. The animals were sick only a few days and as a rule died, although quite a number recovered from the trouble. There was no hog cholera during 1920. There was to the best of my knowledge 563 hogs inoculated with the serum treatment. There is considerable serum on hand in cold storage, and this will carry us through the coming season.

Every passenger boat entering the port has been met, and all live stock listed under the regulations has been inspected. Fifty-nine were admitted into the Colony, and thirty-eight of these have been returned to the best of my knowledge.

R. L. TUCKER,
Government Veterinary Officer.

Smiths Parish,
20th April, 1921.

REPORT OF THE INSPECTOR OF PRODUCE FOR THE SEASON OF 1919-1920.

THE CHAIRMAN,

THE BOARD OF AGRICULTURE:

Sir:

In compliance with Clause No. 6 of the Produce Inspection Act of 1906, I have the honour to forward herewith my report for the season of 1919-1920.

POTATOES.

Total quantity shipped during the season.....		58,674 bbls.
(20,042 barrels of the above quantity were of the Triumph variety).		
Shipped to United States	58,532 bbls.	
Shipped to West Indies	142 "	
		58,674 bbls.

Condemned—300 bbls. mixed grades; regraded and shipped.
400 " improperly coopered; recoopered and shipped.
350 " improperly lime-washed; rewashed and shipped.
600 " improperly stencilled; restencilled and shipped.
284 " rotten and unfit for shipment.

ONIONS.

Total quantity shipped during season		109,072 crates.
Shipped to United States	81,315 crates.	
Shipped to Canada	8,549 "	
Shipped to West Indies.....	19,208 "	
		109,072 crates.

Condemned—606 crates, mixed grades; shipped to West Indies.
450 " short packed; repacked and shipped.
680 " crates defective; recrated and shipped.
50 " rotten and unfit for shipment.

EXPENSES.

All expenditure connected with this service amounted to £735. 15.10.

I am very pleased to report a marked improvement in the grading and packing of produce during the past season.

I have the honour to be,
Sir,
Your obedient servant,
R. W. BROWNE,
Inspector of Produce.

Devonshire,
September 10th, 1920.

REPORT OF THE INSPECTOR OF GREEN VEGETABLES FOR THE SEASON OF 1919-1920.

THE CHAIRMAN,

BOARD OF AGRICULTURE.

Sir:

I have the honour to forward to you for the information of the Board of Agriculture my report on the inspection of Green Vegetables shipped from the Colony during the season of 1919-1920.

On my appointment to the office of Inspector of Green Vegetables on 15th November, 1919, I entered on my duties immediately.

The season opened with a shipment of 474 crates of Green Vegetables, which left Hamilton by the S. S. Charybdis, December 1st, 1919. This proved to be the last trip made by the Charybdis. The chill-room accommodation was ample and the vegetables reached New York in good condition.

On 14th December, 1919, the S. S. Fort Hamilton was put on the route. This vessel has a chill-room capacity of 24,000 cubic feet, which proved to be quite sufficient for all demands of the trade during the season. On 3rd January, 1920, a quantity of vegetables was left behind on the dock at Hamilton, but this was not in consequence of any lack of chill-room space on board the ship.

Due, in my opinion, to poor seed, the carrots in the early part of the season, and the beets throughout, were of inferior quality; and although some of these yielded a fair price, owing to a keen demand, the return was very much less than would have been realized had the goods been of first quality. The yield was small and the market, particularly for beets, could at no time be fully supplied, thus involving serious loss to the growers. A similar trouble, and due, I believe, to the same cause, was encountered in respect to lettuce, which, with a few exceptions, did not attain to a first class standard.

My experience during the trips I made to New York assures me that the market could easily have assimilated from the middle of February to the end of April, 20,000 crates of vegetables per week without any lowering in price. This quantity we were at no time able to furnish.

CELERY.—With a few exceptions the celery was poor in quality and deficient in quantity, attributable almost wholly to the excessive rain, which prevented proper growth and development. There was, however, a very strong demand with good prices for this vegetable and. in consequence, a considerable quantity was permitted to go forward which under other conditions might have been rejected.

Rejected on Inspection—Celery, large.....	135	crates—	0.9%
Celery, small	503	"	7.0%
Vegetables	2,873	"	1.3%

The percentage rejected on the whole crop works out approximately at 1.3, as against 1.45 in 1918-1919; 2 in 1917-1918, and 2.07 in 1916-1917.

REFERENCES AND APPEALS.—There was only one appeal. The decision of the Inspector was upheld.

PROSECUTIONS.—None.

REPACKING.—I have as usual to record my thanks to Captain N. Holmes for allotment of space for re-packing.

SUPERVISIONS OF CHILL-ROOMS AND MARKET INVESTIGATIONS.—During the season I made, by order of the Director of Agriculture, five trips to New York, between January 22nd and April 23rd, 1920, for the purpose of observing the condition of the vegetables in transit and on landing, and other matter affecting the Green Vegetable industry. Reports of these trips were forwarded to the Director of Agriculture, and in these the subjects of chill-rooms and docking facilities and handling at New York were dealt with at length.

QUANTITIES SHIPPED.—The following quantities were shipped to the United States:

Beans, Fava	1,325	bushel crates.
Beans, string	51½	" "
Beets	35,123	" "
Cabbage	19	" "
Carrots	92,736½	" "
Celery	21,237	" "
Kale	17,021	" "
Lettuce	12,081	" "
Mint	17	" "
Parsley	90,285	" "
Peas	56½	" "
Turnips	1,156	" "
Miscellaneous	183	" "
Total	271,291½	" "

In addition to the above quantity, 85 crates of carrots were shipped to the West Indies.

EXPENDITURE.—All expenditure connected with inspection service amounted to £250-3-0. £197-0-5 was expended in the supervision of chill-rooms and market investigations.

I have the honour to be,

Sir,

Your obedient servant,

G. E. WINTER,

Inspector of Green Vegetables.

Devonshire, Bermuda,

September 22nd, 1920.

REPORT OF INSPECTION OF BLISS TRIUMPHS ON LONG ISLAND, 1920.

THE CHAIRMAN,

BOARD OF AGRICULTURE.

In accordance with the instructions received from the Board I proceeded to Long Island, where I met Mr. H. C. Sands of the New York State Department of Agriculture on June 21st. Together we inspected seventy-five farms, out of which number we condemned twelve. The sixty-three growers whose fields we passed had no leaf-roll on their fields, and no mixture, but the fields showed evidence of 9.15 per cent. mosaic. Many weak plants were prominent, about 6 per cent., caused by fertilizer injury at the time of planting the seed. Fertilizer is distributed by machinery at the time the seed is dropped, and coming in contact with the cuts causes deterioration.

The potatoes in the Orient district made the best growth, but unfortunately most of the seed we condemned is planted here. The seed from which the condemned stock was grown was supplied by Messrs. Frank Couch & Co. through Mr. Tabor. This stock contained 100 per cent. mosaic in every field, as much as 6 per cent. mixture, with 4 per cent. leaf-roll. We telegraphed to Maine and asked Mr. E. W. Russ at Caribou if he had supplied Mr. Couch with the seed passed by Mr. Wortley, and learned that he had not. On our return to New York Mr. Couch admitted that he had bought the seed on the open market, and supplied it to the Long Island farmers.

The estimated yield from the good fields on Long Island is 12,000 barrels, which is ample for Bermuda's requirements.

Mr. H. C. Sands has arranged to inspect the potatoes from Long Island before they are barrelled in New York for shipment to Bermuda. I desire to express my personal appreciation of the interest shown by Mr. Sands in the improvement of seed potatoes for Bermuda.

I would draw attention to the fact that the seed potatoes from Long Island will cost £2-12-4 per barrel in Bermuda, which is made up as follows, and does not include the charge made by the merchants in Bermuda:

	Per Barrel 1919.	Per Barrel 1920.
Paid to Long Island farmer	$3.75	$4.50
Load Agent, Long Island	.18	.18
Railway freight	.27	.27
Barrel	.60	1.50
Head and liners	.07	.37
Labour	.15	.40
Cartage to dock	.20	.20
Profit New York merchant	.23	.23
Profit New York broker	.15	.15
Freight	1.00	1.00
Warfage Hamilton	.04	.04
Interest on investment		.25
Shrinkage 1/16		.50
Exchange	.66	2.87
	$7.30	$12.46

For the information of the Board I would state that the field inspection on Long Island this year has caused a total expenditure of £55-4-9.

B. C. C. OUTERBRIDGE.

Hamilton,
5th August, 1920.

REPORT OF INSPECTION OF CHILI GARNETS IN NOVA SCOTIA, 1920.

THE CHAIRMAN,

BOARD OF AGRICULTURE.

The writer, unable to obtain passage via Halifax, sailed from Bermuda via New York on July 27th, and arrived in Truro on August 1st. Here I met Mr. W. K. McCulloch, who was expecting me for the purpose of inspecting the Chili Garnets in the different districts in which this variety of potato is grown, for the seed requirements of Bermuda.

SUMMARY OF INSPECTION.

District—	Fields Inspected.	Passed.	Condemned.	Acreage.	Estimated Yield.
Cornwallis and Grand Pre ...	40	39	1	114	5,700 bbls.
Windsor	4	3	1	2	220 "
Clifton	54	54	.	104	8,320 "
Masstown	13	13	.	38	3,040 "
Totals	111	109	2	258	17,280 "

CORNWALLIS.—The potatoes in this district on the whole were somewhat disappointing, for we found many fields badly missed, due to a drought right after planting. The poor stands caused us much anxiety at the time, as it was reported that the same condition existed in the Clifton district. It appeared to us that Cornwallis would be unable to fill its orders to Bermuda.

Particular mention should be made of Mr. Oscar Chase's seven-acre field, which is by far the best in the district.

The field condemned in this district showed 6 per cent. leaf-roll, and was grown from Conwallis stock of the previous year.

WINDSOR.—The three fields that passed inspection in this district are of good quality. Mr. Sanford, who is the chief grower, should be encouraged by our Department, and could, with a little persuasion, be of help to us in increasing the acreage grown in the district, and furnish a reliable strain of Garnets for the new growers to grow for Bermuda.

CLIFTON.—Fifty-four fields were inspected, and Mr. McCulloch claimed that the potatoes throughout this district were better than he had ever seen them before.

MASSTOWN.—The thirteen fields inspected and passed in this district were nearly as good as in the Clifton section. This district will have available 2,000 barrels of good seed for Bermuda, which will offset the shortage in the Cornwallis section.

In conclusion the writer wishes to express his appreciation of the service and interest taken in this inspection work by Mr. W. K. McCulloch, and feels that our Board of Agriculture is fortunate in having the services of an official in the Department of Agriculture at Ottawa working so keenly for our interest.

JAS. H. HOLLIS.

Hamilton,
20th September, 1920.

REPORT OF THE LIVE STOCK COMMISSION, 1920.

THE CHAIRMAN,

BOARD OF AGRICULTURE.

We beg to report for the information of the members of the Board of Agriculture that we held a meeting on Thursday the 5th February, and discussed in some detail the question of the improvement of the livestock in these islands.

In our opinion it is desirable for the present to pay particular attention to cattle and the suggestions offered later relate entirely to this branch of livestock.

A survey of the class of milch cows and bulls now in the colony shows that the standard of the milch cows in particular has improved during recent years, but this is more due to the importation of animals from the United States and Canada than to successful breeding in the colony.

The outlook for a rapid improvement in the standard of the Bermuda stock is most discouraging. There are it is true a few excellent bulls, but it is estimated that of about sixty bulls standing for service only six are registered pure-breds; many of the others are a poor type of scrub. Similarly there are only a few pure-bred cows; perhaps not more than twenty. The dairies have some high class grades, but obviously the owners will keep their best cows and such progeny as they have for their own use.

Under existing conditions the obvious tendency is towards a progressive deterioration in quality and milk producing power in the stock bred in the colony, except in the dairies and in one or two exceptional cases.

The Board has recognized for some time past that these conditions existed, but war-time economy prevented more being done than the importation of a pure-bred Ayrshire from Nova Scotia.

The Committee feel very strongly, however, that a further delay should not be permitted, and that this matter should now be taken up on a sufficiently broad line to ensure material progress within a reasonable period of time. In order to do this a liberal grant would have to be obtained from the Legislature, and we feel that the Board would be justified in asking for such a vote in view of the importance of the subject to the colony as a whole.

The reconstructions of agriculture in Europe is causing an increasing demand for well-bred animals of all kinds and the prices of pedigree stock are likely to advance rapidly.

The committee's recommendations are as follows:

1—That the Legislature should be asked to vote a sum of £800 to be spent on the importation of pure-bred stock under such conditions as the Board may decide.

2—That a register for pure-bred animals should be opened by the Department of Agriculture.

3—That a campaign should be started against the use of scrub bulls, but it is clear that little progress can be expected until pedigree animals can be offered as substitutes.

4—That publications dealing with such matters as the importance of pure-bred sires, the feeding of calves and the diseases of animals should be prepared.

B. C. C. OUTERBRIDGE,
F. W. E. PENISTON,
J. H. HOLLIS,
T. St. Geo. GILBERT,
Members, Board of Agriculture.
E. J. WORTLEY,
Director of Agriculture.
R. L. TUCKER,
Government Veterinary Officer.

13th February, 1920.

APPENDIX "A."

FINANCIAL STATEMENT

For the Year Ending December 31st, 1920.

Service—	Amount of Grant.	Amount Expended.	Unexpended. Bal.
General grant	£1,800	£1,799 19 4	8
Produce inspection	750	735 15 10	£14 4 2
Green vegetables inspection	300	250 3 0	49 17 0
Travelling expenses	40	30 10 0	9 10 0
Animal diseases	50	45 2 5	4 17 7
Supervision of chill rooms and market investigations	200	197 0 5	2 19 7
Maintenance of section at Imperial Institute	5 7 6	5 7 6	. . .
Payment of members of Board	80	64 8 0	15 12 0
Totals	£3,225 7 6	£3,128 6 6	£97 1 0

E. A. McCALLAN,

Director of Agriculture.

31st March, 1921.

APPENDIX "B."

Statement of Reimbursements to Government During the Year Ending 31st December, 1920.

Sales—Potatoes sold locally	£3 18 6
Potatoes sold in New York	189 13 0
Vegetables sold locally	3 14 0
Vegetables sold in New York	11 4 0
Miscellaneous	15 0
	£209 4 6

E. A. McCALLAN,

Director of Agriculture.

31st March, 1921.